

Claims

1. A paint composition having far-infrared radioactivity and antibiotic activity, comprising a thermosetting resin, 9-60 parts by weight of ceramic powder and 0.2-4.0 parts by weight 5 of phosphoric acid, based on 100 parts by weight of the thermosetting resin.
2. The paint composition according to claim 1, wherein the thermosetting resin comprises at least one resin selected from the group consisting of polyester resin, silicone modified 10 polyester resin and acryl resin, each of which has a molecular weight of 10,000 or more.
3. The paint composition according to claim 2, wherein the thermosetting resin is a polyester resin or an acryl resin having a molecular weight of 10,000 or more.
- 15 4. The paint composition according to claim 2, wherein the thermosetting resin has a molecular weight of 10,000-20,000.
5. The paint composition according to claim 1, wherein the ceramic powder comprises at least one selected from the 20 group consisting of CaCO_3 , ZnO , and Al_2O_3 .
6. The paint composition according to claim 5, wherein

the ceramic powder comprises 3-20 parts by weight of CaCO₃, 3-20 parts by weight of ZnO, and 3-20 parts by weight of Al₂O₃, based on 100 parts by weight of the thermosetting resin.

7. The paint composition according to claim 6, wherein
5 the ceramic powder comprises 5-10 parts by weight of CaCO₃, 5-10 parts by weight of ZnO, and 5-10 parts by weight of Al₂O₃, based on 100 parts by weight of the thermosetting resin.

8. The paint composition according to claim 5, wherein
10 the ceramic powder further comprises 3-20 parts by weight of Al-Zn ceramic powder, based on 100 parts by weight of the thermosetting resin.

9. The paint composition according to claim 1, further comprising a coloring pigment, a dispersing agent, a leveling agent and/or a thickening agent.

15 10. The paint composition according to claim 9, wherein at least one additive selected from the group consisting of the dispersing agent, the leveling agent and the thickening agent is used in an amount of 1.0-7.0 parts by weight, based on 100 parts by weight of the thermosetting resin.

20 11. The paint composition according to claim 9, wherein the coloring pigment is used in an amount of 10-80 parts by weight, based on 100 parts by weight of the thermosetting

resin.

12. The paint composition according to any one of claims 1 to 11, further comprising 0.01-1.0 parts by weight of a silane compound, based on 100 parts by weight of the 5 thermosetting resin.

13. The paint composition according to claim 12, wherein the silane compound comprises at least one selected from the group consisting of mercapto-propyl-trimethoxy silane, 3-aminopropyltriethoxy silane, 3-trimethoxysilylpropyl 10 methacrylate, and 3-aminopropylmethoxy silane.

14. The paint composition according to any one of claims 1 to 11, further comprising 2-6 parts by weight of a curing catalyst, based on 100 parts by weight of the thermosetting resin.

15 15. The paint composition according to claim 12, further comprising 2-6 parts by weight of a curing catalyst, based on 100 parts by weight of the thermosetting resin.

16. The paint composition according to claim 14, wherein the curing catalyst is dodecylbenzenesulfonic acid.

20 17. The paint composition according to claim 15, wherein the curing catalyst is dodecylbenzenesulfonic acid.

18. A precoated metal sheet coated with the paint composition of any one of claims 1 to 11.

19. A precoated metal sheet coated with the paint composition of claim 12.

5 20. A precoated metal sheet coated with the paint composition of claim 14.

21. A precoated metal sheet coated with the paint composition of claim 15.

22. The precoated metal sheet according to claim 18,
10 wherein the paint composition is applied to a dry film thickness of 5-25 μm .

23. The precoated metal sheet according to claim 19,
wherein the paint composition is applied to a dry film thickness of 5-25 μm .

15 24. The precoated metal sheet according to claim 20,
wherein the paint composition is applied to a dry film thickness of 5-25 μm .

25. The precoated metal sheet according to claim 21,
wherein the paint composition is applied to a dry film

thickness of 5–25 µm.

26. The precoated metal sheet according to claim 18,
wherein the metal sheet is used for home appliances.

27. The precoated metal sheet according to claim 19,
5 wherein the metal sheet is used for home appliances.

28. The precoated metal sheet according to claim 20,
wherein the metal sheet is used for home appliances.

29. The precoated metal sheet according to claim 21,
wherein the metal sheet is used for home appliances.